



Color & Appearance Testing Program

Summary Report # 170 - 4th Qtr 2014

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Analysis Analysis Name

- [408](#) [Color & Color Difference \(Paint Chips\) - 45-0](#)
- [409](#) [Color & Color Difference \(Paint Chips\) Sphere](#)
- [411](#) [Spectrophotometric \(Paint Chips\) - Sphere](#)
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ABOUT THE PROGRAM

The Collaborative Reference Program for Color & Appearance is operated and maintained by Collaborative Testing Services, Inc. (CTS), with technical guidance and advice provided by representatives from various instrument manufacturers. The program allows laboratories to compare periodically the performance of their testing with that of other laboratories.

Paint chip samples, which have been custom-made specifically for Collaborative Testing Services by Munsell Color, X-Rite Inc., Grand Rapids, MI, are distributed four times per year to participating laboratories. Gloss participants test two pairs of paint chip samples at different gloss levels, approximately 5-10 units apart. Color & Color Difference participants measure a set of two opaque color paint chips, selected from throughout the full color spectrum, consisting of a nonmetameric match with small color differences. These data are analyzed in two separate tables based on the conditions of measurement used. Laboratories that also participate in the Spectrophotometric analyses measure one of the opaque color chips for % reflectance at 16 wavelengths.

Please refer to each test's 'Key' for definitions of terms used in the tables and graphs and guidelines to interpreting the results. Also shown are notes concerning specific laboratory results, as well as significant findings related to instrument types or other testing variations.

ABOUT CTS

Founded in 1971, CTS is a privately-owned company that specializes in interlaboratory tests for a wide variety of industries, including rubber, plastics, fasteners and metals, containerboard, paper, color, and wine as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality control objectives. Labs from the U.S., as well as more than 80 countries, currently participate in the CTS programs.

If there are any questions on the report or testing program, please contact:

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Key for Color Program Web Summary Report

WebCode	Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Color Report published on the CTS web site. The Web Code for each analysis can be found in the Performance Analysis Report mailed to each participant.
Lab Mean	The average of the 2 test results obtained by the participant for CIE L*,a*,b* color space values.
Grand Mean	The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.
Between-Lab Standard Deviation	An indication of the precision of measurement between the laboratories. The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).
Comparative Performance Value	An indication of how well a laboratory's results agree with the other participants. The CPV is a ratio indicating the number of standard deviations from the GRAND MEAN. The closer a laboratory's COMPARATIVE PERFORMANCE VALUE is to zero, the more consistent its results are with the other participants' data (and vice versa). The critical value for each CPV will vary depending on the number of labs participating in a test.
Graphs	For each laboratory, the LAB MEAN for the first sample is plotted against the LAB MEAN for the second sample with each point representing a laboratory. The horizontal and vertical axes are the GRAND MEANS for each sample. For each test there are three plots: L* ₂ vs L* ₁ , a* ₂ vs a* ₁ and b* ₂ vs b* ₁ . The a* and b* plots are created using absolute values.
Inst Code	A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section).
Data Flag	DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol:

<u>DATA FLAG</u>	<u>STATISTICALLY INCLUDED/EXCLUDED</u>	<u>ACTION REQUIRED</u>
*	INCLUDED	CAUTION - review testing procedure and monitor future results. Results fall outside 95% ellipse but within a 99% ellipse that is calculated but not drawn.
X	EXCLUDED	STOP - immediate review of data and/or testing procedure is required. Results fall outside the 99% ellipse and one or more CPV are greater than critical value. See specific notes following each table for more information on why the data is excluded. It is also possible to have an "X" for individual color coordinate (L*, a* or b*) without overall "X" flag. It means that results fall outside the 99% ellipse for particular coordinate but have no CPV flags. Those results will not require any action.
M	EXCLUDED	PROCEED - lab was unable to report data for at least one sample. However, a lab receiving two of more M flags for a test may need to stop and review its testing procedures.

Key for Spectrophotometric Web Summary Report

WebCode	Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Color Report published on the CTS web site. The Web Code for each analysis can be found in the Performance Analysis Report mailed to each participant.
Grand Mean	The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.
Between-Lab Standard Deviation	An indication of the precision of measurement between the laboratories. The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).
Inst Code	A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section).
Data Flag	DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol:

<u>DATA FLAG</u>	<u>STATISTICALLY INCLUDED/EXCLUDED</u>	<u>ACTION REQUIRED</u>
*	INCLUDED	CAUTION - review testing procedure and monitor future results. Results fall outside 95% ellipse but within a 99% ellipse that is calculated but not drawn.
X	EXCLUDED	STOP - immediate review of data and/or testing procedure is required. See specific notes following each table for more information on why the data is excluded.

In addition to the DATA FLAG column, it is also possible to have an X on individual wavelength values as follows:

- X - The laboratory's mean for that wavelength is greater than a 95% deviation from the GRAND MEAN.

Key for Color Program (Gloss) Web Summary Report

WebCode Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Color Report published on the CTS web site. The Web Code for each analysis can be found in the Performance Analysis Report mailed to each participant.

Lab Mean The average of the test results obtained by the participant.

Grand Mean The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.

Difference from Grand Mean The difference of the LAB MEAN from the GRAND MEAN.

Between-Lab Standard Deviation An indication of the precision of measurement between the laboratories. The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).

Comparative Performance Value An indication of how well a laboratory's results agree with the other participants. The CPV is a ratio indicating the number of standard deviations from the GRAND MEAN. The closer a laboratory's COMPARATIVE PERFORMANCE VALUE is to zero, the more consistent its results are with the other participants' data (and vice versa). The critical value for each CPV will vary depending on the number of labs participating in a test.

Inst Code A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section).

Graphs For each laboratory, the LAB MEAN for the first sample (x-axis) is plotted against the LAB MEAN for the second sample (y-axis) with each point representing a laboratory. The horizontal and vertical cross-hairs are the GRAND MEANS for each sample. When 20 or more laboratories are in the statistics, an ellipse is also drawn so that 95% of the time a randomly selected laboratory will be included inside the ellipse. Plotted data flags are explained above.

Data Flag DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol:

<u>DATA FLAG</u>	<u>STATISTICALLY INCLUDED/EXCLUDED</u>	<u>ACTION REQUIRED</u>
*	INCLUDED	CAUTION - review testing procedure and monitor future results. Results fall outside 95% ellipse but within a 99% ellipse that is calculated but not drawn.
X	EXCLUDED	STOP - immediate review of data and/or testing procedure is required. Results fall outside the 99% ellipse. See specific notes following each table for more information on why the data is excluded.
M	EXCLUDED	PROCEED - lab was unable to report data for at least one sample. However, a lab receiving two of more M flags for a test may need to stop and review its testing procedures.

Interlaboratory Testing Program for Color & Appearance
Analysis 408

Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

<u>WebCode</u> <u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
		<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
3NY64N	D141	56.30	-24.79	14.47	0.97	-0.11	-0.37	1.04	HW
	D142	57.27	-24.89	14.10					
43UG2B	D141	56.10	-24.70	15.08	0.99	0.02	-0.23	1.02	HY
	D142	57.09	-24.68	14.85					
46FP2J	D141	56.55	-24.87	14.70	0.98	-0.05	-0.27	1.02	HW
	D142	57.53	-24.92	14.43					
6N8QEE	D141	56.75	-24.98	14.61	0.87	-0.10	-0.37	0.95	HW
	D142	57.62	-25.08	14.24					
822JRE	D141	56.20	-24.91	14.49	0.98	-0.10	-0.28	1.02	HW
	D142	57.18	-25.01	14.21					
8RXAMA	D141	56.13	-23.94	13.92	0.92	-0.05	-0.34	0.98	GE
	D142	57.05	-23.99	13.58					
9ADB2P	D141	56.39	-24.94	14.63	0.97	-0.10	-0.29	1.01	HW
	D142	57.36	-25.03	14.34					
9CG4X9	D141	56.42	-23.94	15.40	0.88	-0.04	-0.29	0.93	GU
	D142	57.30	-23.98	15.12					
9TRMUF	D141	56.59	-24.55	15.04	0.91	-0.13	-0.24	0.95	XO
	D142	57.50	-24.68	14.81					
AGR4L8	D141	56.58	-24.34	14.86	0.91	-0.09	-0.34	0.98	AB
	D142	57.49	-24.42	14.52					
ARUP66	D141	56.24	-24.62	15.12	0.90	-0.05	-0.28	0.94	XU
	D142	57.14	-24.67	14.85					
B78RU8	D141	56.47	-24.60	15.50	0.95	-0.02	-0.24	0.98	GH
	D142	57.41	-24.62	15.26					
BB7YJB	D141	56.50	-24.60	15.13	0.88	0.04	-0.20	0.90	XU
	D142	57.38	-24.57	14.93					
BP3MHB	D141	56.67	-24.72	14.95	0.83	-0.09	-0.27	0.88	XO
	D142	57.50	-24.81	14.68					

Interlaboratory Testing Program for Color & Appearance
Analysis 408

Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

<u>WebCode</u> <u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
		<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
D99CUC	D141	56.27	-24.59	14.95	0.86	-0.02	-0.28	0.90	XO
	D142	57.13	-24.61	14.67					
DCMGJE	D141	56.53	-25.05	14.53	0.98	-0.10	-0.32	1.03	HW
	D142	57.51	-25.15	14.21					
DT8ZYD	D141	56.42	-24.20	15.40	0.86	-0.05	-0.31	0.91	XR
	D142	57.28	-24.25	15.09					
ERVBK8	D141	56.38	-24.80	14.47	0.83	-0.10	-0.33	0.90	HW
	D142	57.21	-24.90	14.14					
FRT3TY	D141	56.35	-24.94	15.08	0.86	0.00	-0.18	0.87	GD
	D142	57.21	-24.94	14.91					
GFU7BD	D141	56.24	-24.06	14.68	0.99	-0.18	-0.27	1.04	HK
	D142	57.23	-24.24	14.41					
GW6BU4	D141	56.52	-24.77	15.66	0.89	-0.10	-0.29	0.94	GB
	D142	57.41	-24.87	15.37					
JEARTY	D141	56.65	-24.24	14.75	0.96	0.03	-0.24	0.99	XX
	D142	57.61	-24.21	14.51					
JFLBRB	D141	56.41	-24.50	14.98	0.93	-0.16	-0.29	0.99	XM
	D142	57.34	-24.66	14.69					
KE87VX	D141	56.02	-24.02	14.52	0.88	0.01	-0.30	0.93	HK
	D142	56.89	-24.01	14.22					
L8H9F9	D141	56.39	-24.95	15.31	0.86	-0.09	-0.28	0.90	GH
	D142	57.25	-25.04	15.03					
MYNFT2	D141	56.43	-24.59	14.99	0.90	-0.14	-0.28	0.95	XN
	D142	57.32	-24.73	14.72					
P2KN4N	D141	56.08	-24.50	15.00	0.93	-0.05	-0.27	0.97	XK
	D142	57.01	-24.55	14.73					
P3GV2U	D141	56.46	-24.59	14.88	0.94	-0.06	-0.20	0.96	XO
	D142	57.40	-24.64	14.69					

Interlaboratory Testing Program for Color & Appearance
Analysis 408

Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

<u>WebCode</u> <u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
		<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
PVKB77	D141	56.31	-24.42	15.15	0.95	-0.05	-0.27	0.98	XZ
	D142	57.25	-24.46	14.88					
PX8D32	D141	56.39	-24.90	14.81	0.98	-0.12	-0.28	1.02	HW
	D142	57.37	-25.02	14.53					
Q3C4TQ	D141	56.51	-24.76	14.85	0.90	0.07	-0.22	0.93	XZ
	D142	57.41	-24.68	14.63					
QXLW9W	D141	56.09	-23.88	13.87	0.98	-0.25	-0.42	1.09	TN
	D142	57.07	-24.12	13.45					
VAZHJT	D141	56.27	-24.96	14.53	0.95	-0.20	-0.31	1.01	HW
	D142	57.22	-25.16	14.22					
VGWHWZ	D141	56.36	-25.04	14.26	1.02	0.05	-0.26	1.05	MG
	D142	57.38	-24.99	14.00					
VTRVAX	D141	56.68	-24.96	14.63	1.01	-0.09	-0.29	1.05	HW
	D142	57.68	-25.05	14.35					
WXMKD4	D141	56.15	-24.89	14.30	0.88	-0.26	-0.32	0.97	HW
	D142	57.03	-25.15	13.98					
Y82DJG	D141	55.89	-24.89	15.04	0.94	-0.12	-0.19	0.96	MQ
	D142	56.83	-25.00	14.85					
ZFNUMB	D141	56.92	-24.38	14.86	0.95	-0.08	-0.42	1.04	AE
	D142	57.87	-24.46	14.44					

Summary Statistics

<u>Samples</u>	<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>
Grand Means							
D141	56.38	-24.61	14.82	0.92	-0.08	-0.28	0.97
D142	57.31	-24.69	14.54				
Std Dev Btwn Labs							
D141	0.22	0.34	0.40	0.05	0.07	0.06	0.05
D142	0.22	0.35	0.43				

Statistics based on 38 of 38 reporting participants

Interlaboratory Testing Program for Color & Appearance

Analysis 408

Color and Color Difference - Paint Chips - 45-0 Geometry Instruments

CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

Interlaboratory Testing Program for Color & Appearance

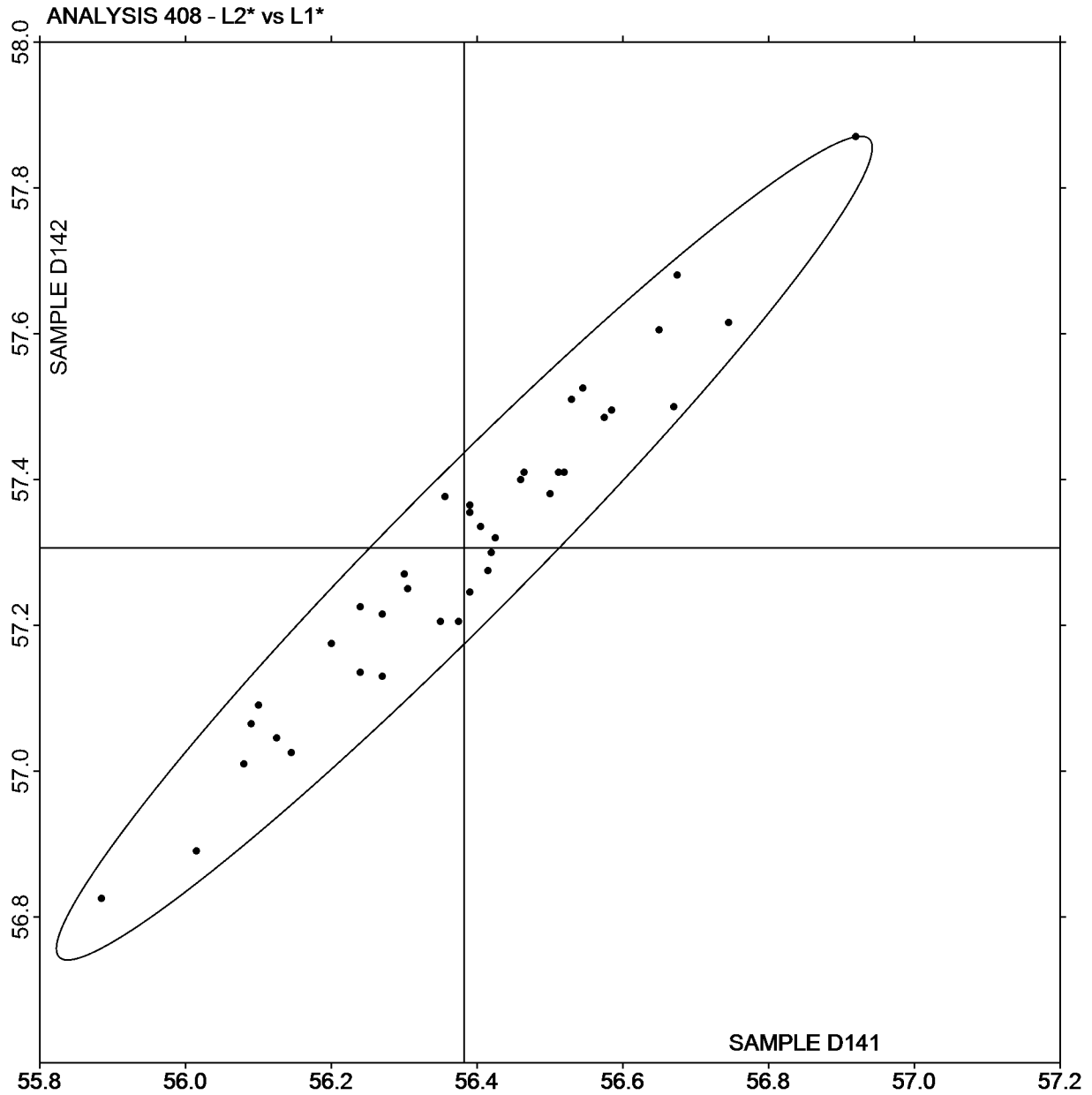
Analysis 408

Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

L2* vs L1*

SAMPLE D141 = 56.38

SAMPLE D142 = 57.31



Interlaboratory Testing Program for Color & Appearance

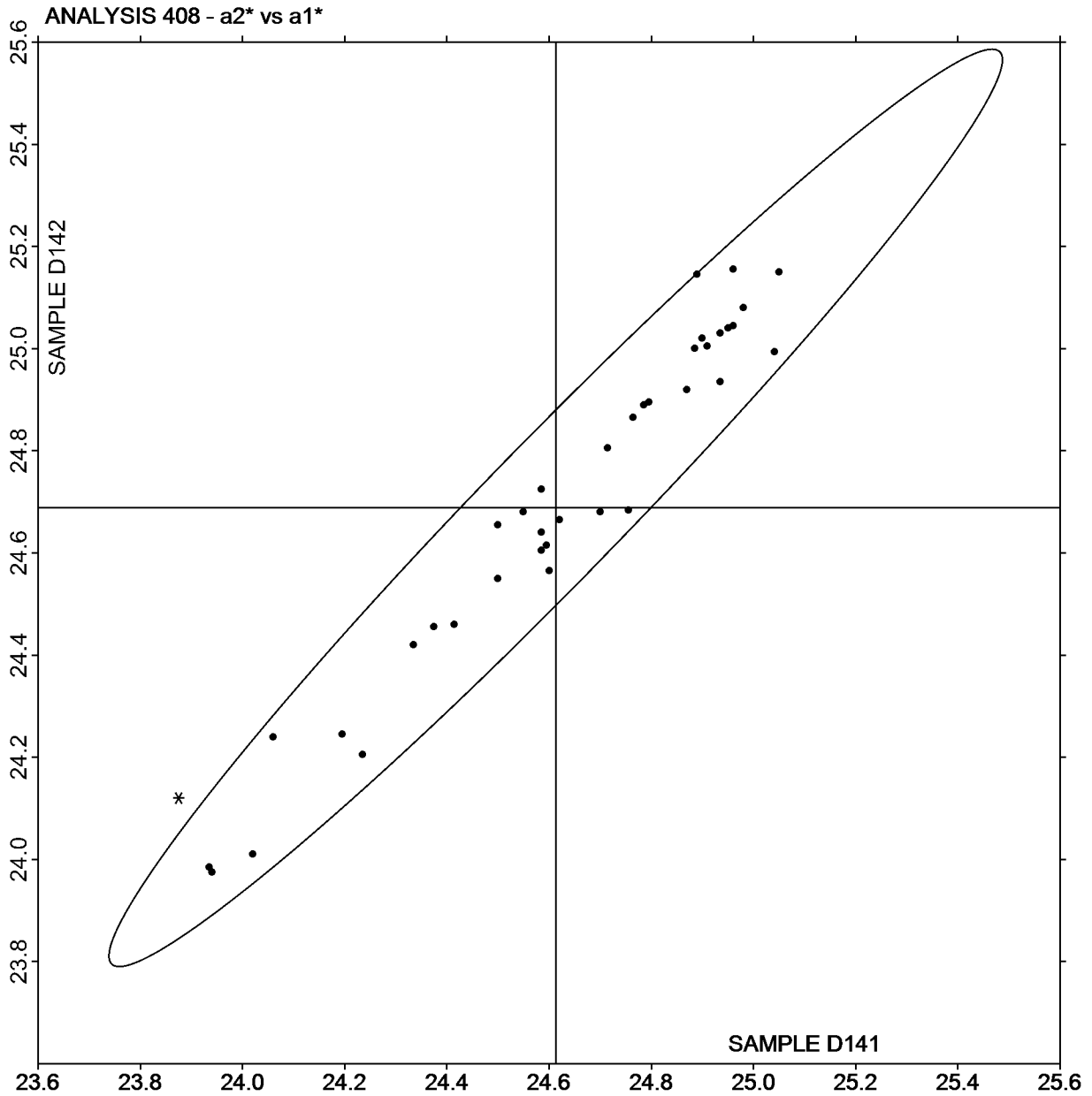
Analysis 408

Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

a2* vs a1*

SAMPLE D141 = -24.61

SAMPLE D142 = -24.69



Interlaboratory Testing Program for Color & Appearance

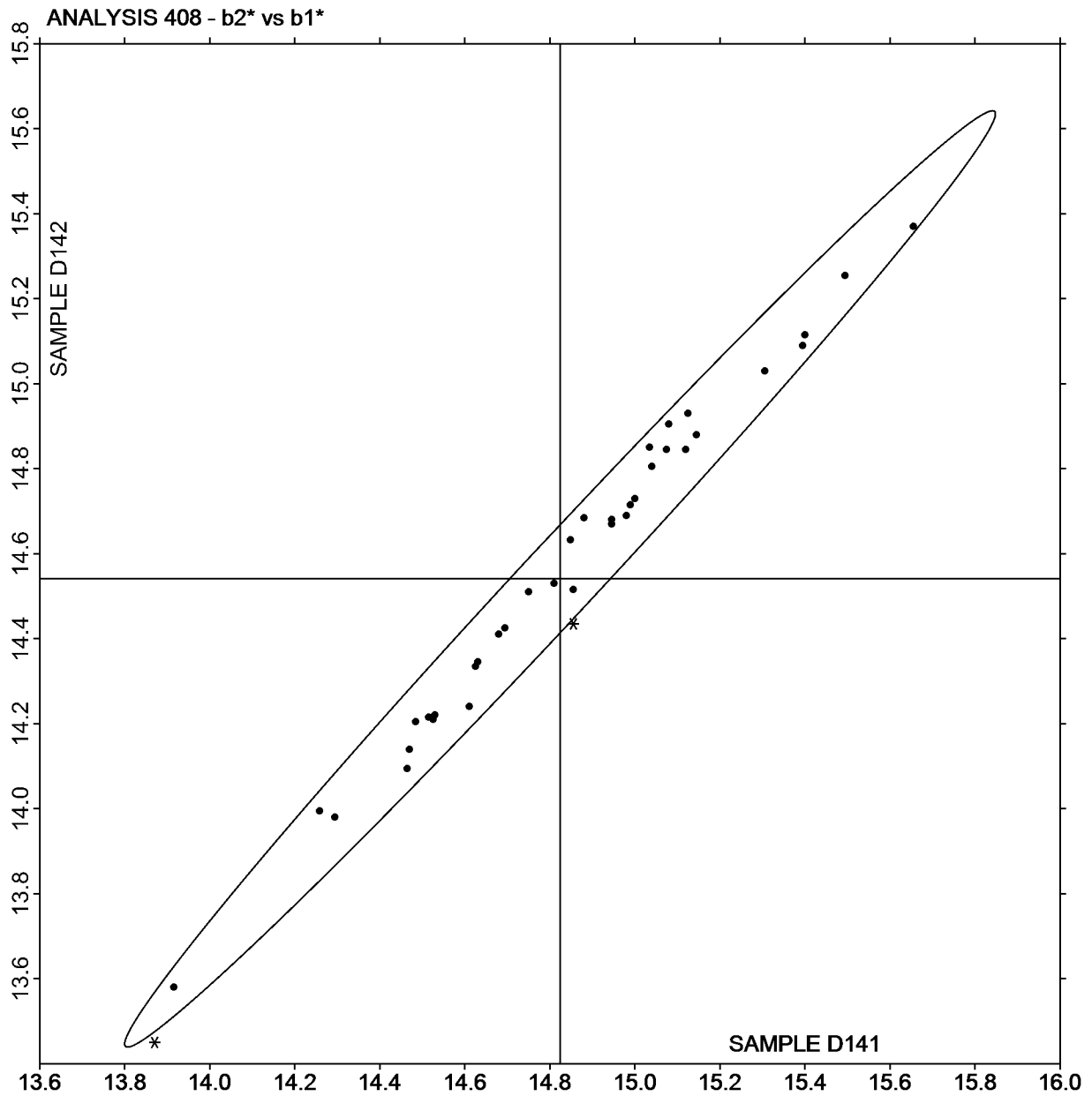
Analysis 408

Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

b2* vs b1*

SAMPLE D141 = 14.82

SAMPLE D142 = 14.54



Plot created using absolute values.

Interlaboratory Testing Program for Color & Appearance
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

<u>WebCode</u> <u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
		<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
23KRME X	D141	23.59	-0.60	-2.68	0.00	0.00	0.00	0.00	AM
	D142	23.59	-0.60	-2.68					
2F73AK	D141	56.49	-24.31	14.37	0.97	-0.10	-0.32	1.03	XI
	D142	57.46	-24.40	14.05					
2KGMBJ	D141	56.35	-23.96	14.50	1.10	-0.03	-0.33	1.14	XO
	D142	57.44	-23.99	14.18					
2QMR9P	D141	56.86	-24.05	14.75	0.91	-0.02	-0.27	0.95	AM
	D142	57.77	-24.07	14.48					
32LC2P	D141	56.62	-24.23	14.66	0.97	-0.08	-0.43	1.06	MM
	D142	57.59	-24.31	14.24					
348QCX	D141	56.51	-24.26	14.46	0.95	-0.13	-0.38	1.03	XI
	D142	57.45	-24.39	14.08					
3MKXFL	D141	56.48	-24.26	14.43	0.95	-0.05	-0.27	0.99	XI
	D142	57.43	-24.30	14.16					
4GAGTV	D141	56.54	-24.01	14.55	0.92	-0.09	-0.40	1.00	MM
	D142	57.46	-24.10	14.15					
63B6L4	D141	56.76	-24.32	14.84	0.83	0.07	-0.25	0.87	AL
	D142	57.59	-24.25	14.59					
642K3L	D141	56.65	-24.12	14.47	0.92	0.12	-0.25	0.95	HP
	D142	57.56	-24.01	14.22					
66W7UR	D141	56.48	-24.06	14.56	1.02	-0.05	-0.36	1.08	XH
	D142	57.49	-24.10	14.21					
6LKEUB	D141	56.46	-23.96	14.62	1.06	-0.14	-0.41	1.14	MM
	D142	57.52	-24.09	14.21					
6QVUYR	D141	56.64	-24.21	14.41	0.93	-0.09	0.16	0.94	XI
	D142	57.56	-24.30	14.57					
729JLG	D141	56.67	-24.33	14.83	0.92	-0.01	-0.30	0.96	PE
	D142	57.58	-24.34	14.54					

Interlaboratory Testing Program for Color & Appearance
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

<u>WebCode</u> <u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
		<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
79PPBF	D141	56.86	-24.25	14.99	0.95	0.04	-0.28	0.99	AM
	D142	57.81	-24.22	14.71					
7HWMVD	D141	56.68	-24.47	14.37	1.01	0.01	-0.32	1.05	HW
	D142	57.68	-24.46	14.05					
7KLTDN	D141	56.51	-24.43	14.30	0.97	-0.12	-0.34	1.03	GD
	D142	57.47	-24.55	13.96					
93EBHA	D141	56.86	-24.47	14.49	0.98	-0.06	-0.31	1.03	AO
	D142	57.84	-24.52	14.18					
9HB3C4	D141	56.52	-24.14	14.59	0.91	-0.07	-0.31	0.96	XI
	D142	57.43	-24.21	14.28					
9L8N2L	D141	56.77	-24.07	14.65	0.91	-0.05	-0.35	0.97	MM
	D142	57.68	-24.12	14.30					
9W96Y4 X	D141	57.85	-24.27	14.37	-0.89	0.02	0.34	0.95	AO
	D142	56.96	-24.25	14.71					
9XZ9HC X	D141	56.50	-23.83	14.65	0.00	-0.01	0.01	0.01	MU
	D142	56.50	-23.84	14.65					
AC22QZ	D141	56.83	-24.40	14.93	0.91	-0.03	-0.37	0.98	AJ
	D142	57.74	-24.43	14.56					
ARUP66	D141	56.64	-24.44	14.70	0.92	-0.07	-0.27	0.96	XI
	D142	57.56	-24.50	14.43					
AZMZfZ	D141	56.41	-24.15	14.35	0.87	-0.09	-0.33	0.93	XI
	D142	57.28	-24.24	14.03					
B2W48C X	D141	57.77	-24.59	14.65	0.93	-0.16	-0.31	0.99	AR
	D142	58.69	-24.75	14.34					
B6C732	D141	56.71	-24.15	14.61	0.97	0.09	-0.24	1.00	AM
	D142	57.67	-24.06	14.38					
B77UJC	D141	56.44	-24.10	14.40	0.99	-0.09	-0.42	1.08	XM
	D142	57.43	-24.19	13.99					

Interlaboratory Testing Program for Color & Appearance
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

<u>WebCode</u>	<u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
			<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
B78RU8		D141	56.17	-24.21	14.36	1.00	0.03	-0.26	1.03	GD
		D142	57.17	-24.19	14.11					
BB7YJB		D141	56.46	-24.35	14.59	0.93	-0.06	-0.31	0.98	XI
		D142	57.39	-24.41	14.28					
BG7MR3		D141	56.88	-24.26	14.80	0.92	-0.08	-0.43	1.01	AJ
		D142	57.80	-24.34	14.38					
BP2F9A		D141	56.55	-24.27	14.50	0.88	-0.10	-0.34	0.94	XI
		D142	57.42	-24.37	14.16					
BUFV38		D141	57.00	-24.25	14.70	0.88	-0.06	-0.27	0.92	AJ
		D142	57.87	-24.30	14.43					
BYKYFM		D141	56.75	-24.11	14.74	0.97	-0.01	-0.32	1.02	HP
		D142	57.72	-24.12	14.42					
CXDWFA		D141	56.61	-24.22	14.58	0.94	-0.10	-0.35	1.00	XH
		D142	57.55	-24.32	14.23					
D4WVEF		D141	56.85	-24.33	14.78	0.99	-0.04	-0.26	1.02	AM
		D142	57.84	-24.37	14.52					
D99CUC		D141	56.31	-24.30	14.54	0.89	0.01	-0.30	0.94	MI
		D142	57.20	-24.29	14.24					
DEBHAF		D141	56.56	-24.31	14.43	0.98	-0.05	-0.28	1.02	XI
		D142	57.54	-24.36	14.15					
DLUBE8		D141	56.90	-24.21	14.81	0.99	-0.08	-0.36	1.05	AR
		D142	57.89	-24.29	14.46					
DVH8F9	X	D141	56.86	-24.88	14.90	1.01	0.05	-0.26	1.04	CA
		D142	57.86	-24.83	14.64					
DZVK8Z		D141	56.65	-24.09	14.69	0.99	-0.06	-0.37	1.05	MM
		D142	57.64	-24.14	14.32					
E6JLM6		D141	56.91	-24.23	14.75	0.90	-0.13	-0.42	1.00	AJ
		D142	57.81	-24.36	14.33					

Interlaboratory Testing Program for Color & Appearance
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

<u>WebCode</u> <u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
		<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
EE94M8	D141	56.82	-24.11	14.69	0.89	-0.02	-0.33	0.95	AJ
	D142	57.71	-24.13	14.37					
EMYVLK	D141	56.73	-24.08	14.62	0.96	-0.14	-0.36	1.03	MM
	D142	57.69	-24.22	14.26					
EP6NUK	D141	56.47	-24.00	14.61	0.94	-0.10	-0.37	1.01	MK
	D142	57.40	-24.10	14.24					
F44KGW	D141	56.64	-24.20	14.69	0.94	-0.06	-0.40	1.02	XO
	D142	57.57	-24.26	14.30					
F6UBF3	D141	56.63	-24.35	14.92	0.93	-0.07	-0.29	0.98	MU
	D142	57.56	-24.41	14.63					
F9E7FA	D141	56.58	-24.19	14.78	0.94	-0.07	-0.36	1.01	AJ
	D142	57.52	-24.26	14.42					
FDCWVE X	D141	55.87	-25.13	15.01	0.84	-0.13	-0.34	0.91	GC
	D142	56.70	-25.26	14.68					
FFEXVC	D141	56.72	-24.21	14.41	0.89	0.02	-0.27	0.93	XO
	D142	57.60	-24.19	14.14					
FJWM9G	D141	56.83	-24.18	14.66	0.97	-0.10	-0.36	1.03	XX
	D142	57.79	-24.28	14.31					
FR8GAG	D141	56.66	-24.17	14.53	0.96	-0.02	-0.37	1.03	AJ
	D142	57.62	-24.19	14.16					
FXXJ89	D141	56.70	-24.12	14.77	0.97	-0.11	-0.44	1.06	HP
	D142	57.66	-24.23	14.33					
FYBTKF	D141	56.71	-24.09	14.86	1.04	-0.14	-0.43	1.13	AJ
	D142	57.75	-24.23	14.44					
GBJPNM	D141	56.47	-24.24	14.50	0.92	-0.05	-0.37	0.99	XI
	D142	57.39	-24.28	14.14					
HBET96	D141	56.66	-23.72	14.38	0.93	-0.04	-0.27	0.97	MM
	D142	57.59	-23.77	14.11					

Interlaboratory Testing Program for Color & Appearance
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

<u>WebCode</u> <u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
		<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
HGNWRW	D141	56.72	-24.01	14.83	0.88	-0.04	-0.35	0.95	AJ
	D142	57.60	-24.05	14.48					
HVG4PD X	D141	56.51	-24.67	15.38	0.90	-0.17	-0.28	0.95	GA
	D142	57.40	-24.84	15.11					
HZXUBT	D141	56.49	-24.19	14.52	0.91	-0.06	-0.36	0.97	XI
	D142	57.39	-24.24	14.16					
JFNV86	D141	56.73	-24.52	14.92	0.97	-0.02	-0.31	1.02	CE
	D142	57.70	-24.54	14.60					
JVJEGV	D141	56.54	-24.52	14.64	0.97	-0.02	-0.28	1.01	GD
	D142	57.51	-24.54	14.36					
JYG4C9	D141	56.77	-24.26	14.40	0.95	0.01	-0.32	1.00	HW
	D142	57.72	-24.25	14.08					
K2JUUAU	D141	56.62	-24.22	14.70	1.00	-0.06	-0.88	1.33	MU
	D142	57.62	-24.28	13.83					
K7Y6KD	D141	56.76	-24.18	14.59	1.07	-0.13	-0.36	1.13	AM
	D142	57.83	-24.31	14.24					
KE8AK3	D141	56.34	-23.85	14.40	1.01	0.07	-0.38	1.07	MG
	D142	57.35	-23.78	14.03					
KHB646	D141	56.43	-24.28	14.65	1.08	-0.10	-0.40	1.15	XH
	D142	57.51	-24.37	14.26					
KL6NYV	D141	56.78	-24.44	14.47	0.98	0.07	-0.20	1.00	AM
	D142	57.76	-24.37	14.27					
L8H9F9	D141	56.80	-24.55	14.61	0.88	-0.05	-0.32	0.93	MV
	D142	57.67	-24.60	14.29					
LHN7CP	D141	56.95	-24.21	14.76	0.94	-0.04	-0.28	0.98	AO
	D142	57.89	-24.25	14.48					
LTMNZ7	D141	56.98	-24.28	14.89	0.86	-0.05	-0.27	0.90	AM
	D142	57.84	-24.33	14.63					

Interlaboratory Testing Program for Color & Appearance
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

<u>WebCode</u>	<u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
			<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
LXEYB6		D141	56.92	-24.00	14.61	0.88	0.01	-0.33	0.93	GF
		D142	57.79	-23.99	14.29					
MK73KU		D141	56.81	-24.33	14.72	0.97	0.03	-0.22	1.00	AM
		D142	57.78	-24.30	14.50					
MYMXX7		D141	56.53	-24.09	14.52	0.92	-0.01	-0.31	0.97	XZ
		D142	57.46	-24.10	14.21					
MYNFT2		D141	56.40	-24.39	14.33	0.99	0.06	-0.24	1.02	XO
		D142	57.38	-24.34	14.09					
NHEXCZ		D141	56.83	-24.12	14.78	1.06	-0.06	-0.43	1.14	AO
		D142	57.89	-24.18	14.35					
P2KN4N		D141	56.78	-24.27	14.73	0.98	-0.15	-0.42	1.07	AO
		D142	57.75	-24.41	14.31					
P32ARR	X	D141	57.08	-28.82	14.42	0.92	0.08	-0.26	0.96	MU
		D142	58.00	-28.75	14.16					
PLC4JY		D141	56.79	-24.06	14.88	1.06	-0.11	-0.41	1.14	AO
		D142	57.85	-24.17	14.47					
PPT2XT	X	D141	57.22	-24.04	14.41	0.43	0.01	-0.16	0.46	MM
		D142	57.65	-24.03	14.25					
PRZG8K		D141	56.94	-24.36	14.83	0.91	-0.06	-0.37	0.98	AJ
		D142	57.84	-24.42	14.46					
PVW6L7		D141	56.69	-24.16	14.02	0.93	-0.19	-0.28	0.98	HH
		D142	57.62	-24.34	13.74					
Q63AC3		D141	57.07	-24.62	14.97	0.92	-0.04	-0.37	0.99	AJ
		D142	57.99	-24.66	14.60					
Q89RAX	X	D141	57.51	-27.67	16.16	1.16	0.11	-0.46	1.25	XO
		D142	58.67	-27.56	15.70					
QAEFM3		D141	56.65	-24.28	14.66	0.94	-0.04	-0.27	0.98	MU
		D142	57.59	-24.32	14.39					

Interlaboratory Testing Program for Color & Appearance
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

<u>WebCode</u> <u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
		<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
QBTMB6	D141	56.85	-24.28	14.82	0.91	-0.14	-0.42	1.00	AJ
	D142	57.76	-24.42	14.40					
QK28KT	D141	56.28	-24.15	14.58	0.96	-0.03	-0.31	1.01	XH
	D142	57.24	-24.18	14.28					
QL9YGV	D141	56.80	-24.16	14.65	0.99	-0.07	-0.33	1.04	AJ
	D142	57.79	-24.23	14.32					
QM7VYH	D141	56.69	-24.55	14.64	0.90	-0.03	-0.34	0.96	XU
	D142	57.59	-24.58	14.30					
QX4CF7 X	D141	56.78	-24.44	13.91	0.97	-0.09	-0.35	1.03	HH
	D142	57.75	-24.52	13.57					
QXLW9W	D141	56.34	-24.16	14.96	0.93	-0.21	-0.46	1.06	CA
	D142	57.27	-24.37	14.50					
R7UMDK X	D141	59.67	-24.68	13.84	1.00	-0.03	-0.25	1.03	XI
	D142	60.67	-24.71	13.59					
REJDW7	D141	56.39	-24.01	14.89	1.01	-0.13	-0.36	1.07	MI
	D142	57.39	-24.14	14.53					
RLJVBJ	D141	56.67	-24.29	14.71	0.92	-0.07	-0.37	0.99	MV
	D142	57.59	-24.36	14.34					
RW4UTV X	D141	96.09	3.63	-14.46	-0.01	-0.01	0.09	0.09	AO
	D142	96.08	3.62	-14.38					
T37NJM	D141	56.88	-24.22	14.68	0.92	0.04	-0.22	0.95	AO
	D142	57.80	-24.18	14.46					
T7928V	D141	56.70	-24.11	14.50	0.98	0.08	-0.24	1.01	MM
	D142	57.68	-24.04	14.27					
TDMHM4	D141	56.55	-23.84	15.19	0.97	-0.01	-0.41	1.05	HG
	D142	57.52	-23.85	14.78					
TLGKTK	D141	56.68	-24.19	14.59	1.01	-0.05	-0.30	1.05	AQ
	D142	57.69	-24.23	14.29					

Interlaboratory Testing Program for Color & Appearance
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

<u>WebCode</u> <u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
		<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
TMGV2P	D141	56.82	-24.10	14.67	0.95	-0.07	-0.30	0.99	AJ
	D142	57.76	-24.17	14.37					
TP2FTR	D141	56.44	-23.97	14.51	1.01	0.00	-0.29	1.04	XH
	D142	57.44	-23.97	14.22					
TWH2NH	D141	56.48	-24.02	14.46	0.91	-0.05	-0.32	0.96	XI
	D142	57.38	-24.07	14.14					
UDMPEM	D141	56.81	-24.46	14.78	0.86	0.03	-0.32	0.91	MV
	D142	57.67	-24.43	14.47					
VAZHJT	D141	56.35	-23.98	14.54	1.04	-0.14	-0.37	1.11	MI
	D142	57.39	-24.11	14.17					
VEQUJV	D141	56.96	-24.15	14.69	0.84	-0.08	-0.29	0.89	HF
	D142	57.80	-24.23	14.40					
VH9JWZ	D141	56.75	-24.19	14.46	1.00	-0.05	-0.36	1.06	AJ
	D142	57.75	-24.24	14.11					
VK2VQK	D141	56.84	-24.10	14.58	0.89	0.03	-0.29	0.93	AJ
	D142	57.73	-24.07	14.29					
VQ8E3R	D141	56.92	-24.39	14.77	1.00	-0.06	-0.32	1.05	AO
	D142	57.92	-24.44	14.45					
VXN3ML	D141	56.86	-24.30	14.94	0.96	0.05	-0.27	0.99	AM
	D142	57.81	-24.25	14.68					
WDCMVT	D141	56.76	-24.15	14.45	0.99	-0.12	-0.34	1.05	AJ
	D142	57.75	-24.27	14.11					
WP8VFG	D141	56.46	-24.16	14.55	0.97	-0.13	-0.37	1.05	XI
	D142	57.43	-24.29	14.18					
WYWPQR	D141	56.65	-24.42	14.78	0.99	-0.02	-0.35	1.05	MU
	D142	57.64	-24.44	14.44					
X2X3XH	D141	56.54	-24.05	14.34	0.98	-0.01	-0.29	1.02	MJ
	D142	57.52	-24.06	14.05					

Interlaboratory Testing Program for Color & Appearance
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

<u>WebCode</u> <u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
		<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
XBNN3F	D141	56.38	-24.38	14.12	0.91	-0.01	-0.29	0.95	GD
	D142	57.29	-24.39	13.84					
XHMP9V	D141	56.62	-24.07	14.52	0.97	-0.07	-0.29	1.01	MM
	D142	57.59	-24.13	14.23					
XKUFLH	D141	56.71	-23.88	14.76	1.01	-0.06	-0.30	1.05	HP
	D142	57.71	-23.94	14.46					
XMG6RG	D141	56.33	-24.19	14.43	0.95	-0.02	-0.26	0.98	XH
	D142	57.28	-24.21	14.18					
XZ3H7C	D141	56.71	-24.09	14.56	0.88	-0.06	-0.34	0.95	MM
	D142	57.59	-24.15	14.22					
YEHGJB	D141	56.40	-24.32	14.14	1.02	0.09	-0.23	1.05	GD
	D142	57.42	-24.23	13.92					
YJCD4V	D141	56.91	-24.16	14.57	0.98	-0.09	-0.34	1.04	AM
	D142	57.89	-24.25	14.23					
YZFHFR	D141	56.53	-24.15	14.45	0.94	-0.02	-0.25	0.97	XI
	D142	57.46	-24.17	14.20					
Z7738E	D141	56.55	-23.81	14.71	0.94	-0.04	-0.33	0.99	MM
	D142	57.49	-23.85	14.38					
ZJ8NLW	D141	56.61	-24.07	14.33	0.97	-0.02	-0.32	1.02	XI
	D142	57.58	-24.08	14.02					
ZMQBBH	D141	56.76	-24.21	14.58	1.00	-0.09	-0.34	1.06	MT
	D142	57.76	-24.30	14.24					
ZNKTXW	D141	56.67	-24.34	14.58	1.00	-0.02	-0.32	1.05	GG
	D142	57.66	-24.36	14.26					

Interlaboratory Testing Program for Color & Appearance
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

Summary Statistics

<u>Samples</u>	<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>
Grand Means							
D141	56.66	-24.20	14.62				
D142	57.61	-24.25	14.30	0.95	-0.05	-0.33	1.01
Std Dev Btwn Labs							
D141	0.19	0.17	0.20				
D142	0.18	0.18	0.19	0.05	0.06	0.09	0.06

Statistics based on 111 of 124 reporting participants

Comments assigned on Data Flags for Test #409

23KRME(X) - Extreme data.

9W96Y4(X) - High L* values for Sample D141. Low L* values for Sample D142. Also low DL and high Db values. Data appear to be transposed between samples D141 and D142.

9XZ9HC(X) - Low L* value for Sample D142. Also Small DL, Db, and DE values.

B2W48C(X) - High L* values.

DVH8F9(X) - Low a* values. Large replication difference for a* values. Also Large replication difference for L* and b* values for Sample D142.

FDCWVE(X) - Low L* and a* values.

HVG4PD(X) - High b* values. Low a* values for Sample D142.

P32ARR(X) - Low a* values.

PPT2XT(X) - High L* value for Sample D141. Large replication difference for L* and b* values for Sample D141. Also Small DL and DE values.

Q89RAX(X) - High L* and b* values. Low a* values. Also large DL and DE values.

QX4CF7(X) - Low b* values.

R7UMDK(X) - High L* values and low b* values.

RW4UTV(X) - Extreme data.

Interlaboratory Testing Program for Color & Appearance

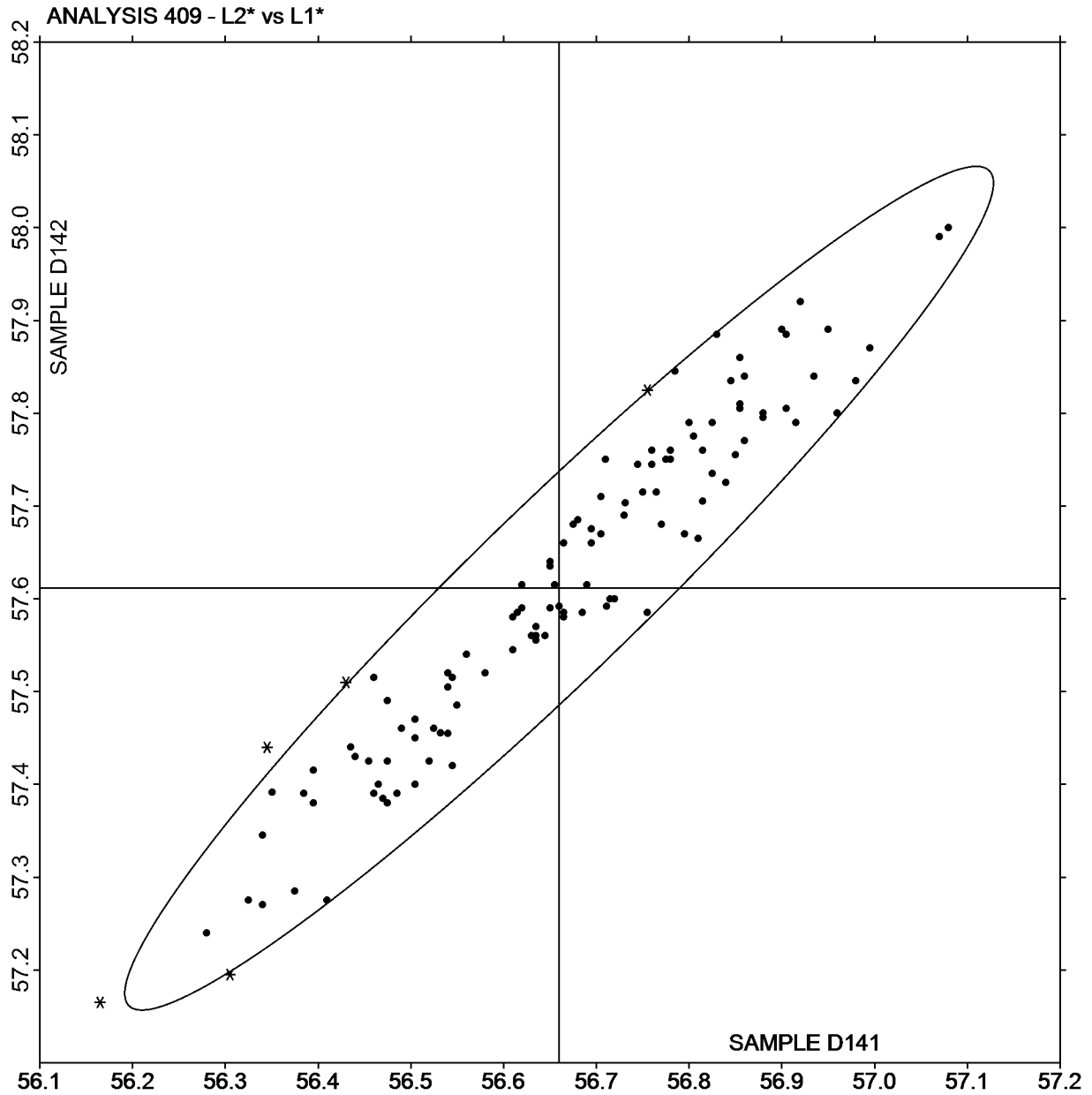
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

L2* vs L1*

SAMPLE D141 = 56.66

SAMPLE D142 = 57.61



Interlaboratory Testing Program for Color & Appearance

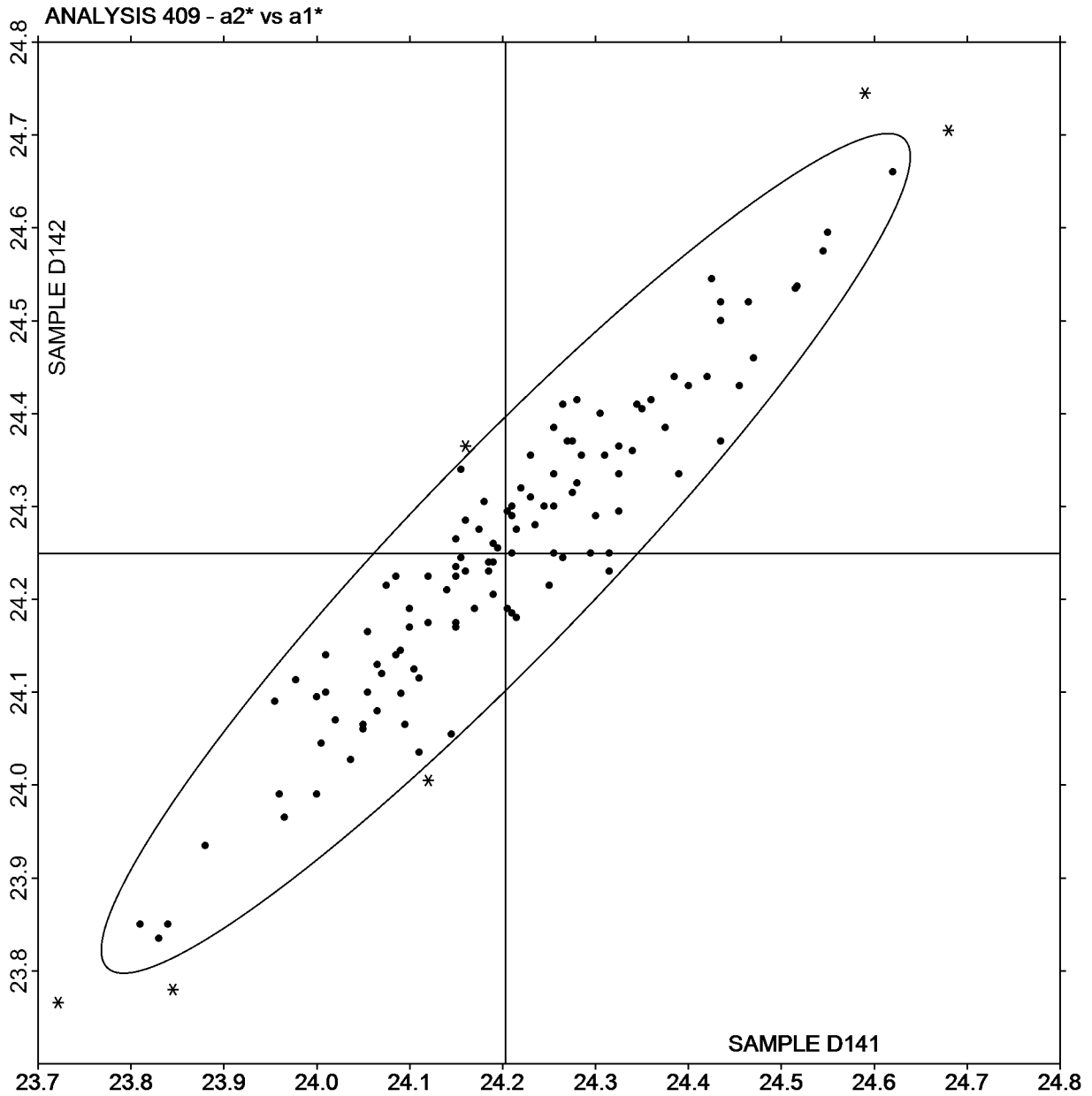
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

a2* vs a1*

SAMPLE D141 = -24.20

SAMPLE D142 = -24.25



Interlaboratory Testing Program for Color & Appearance

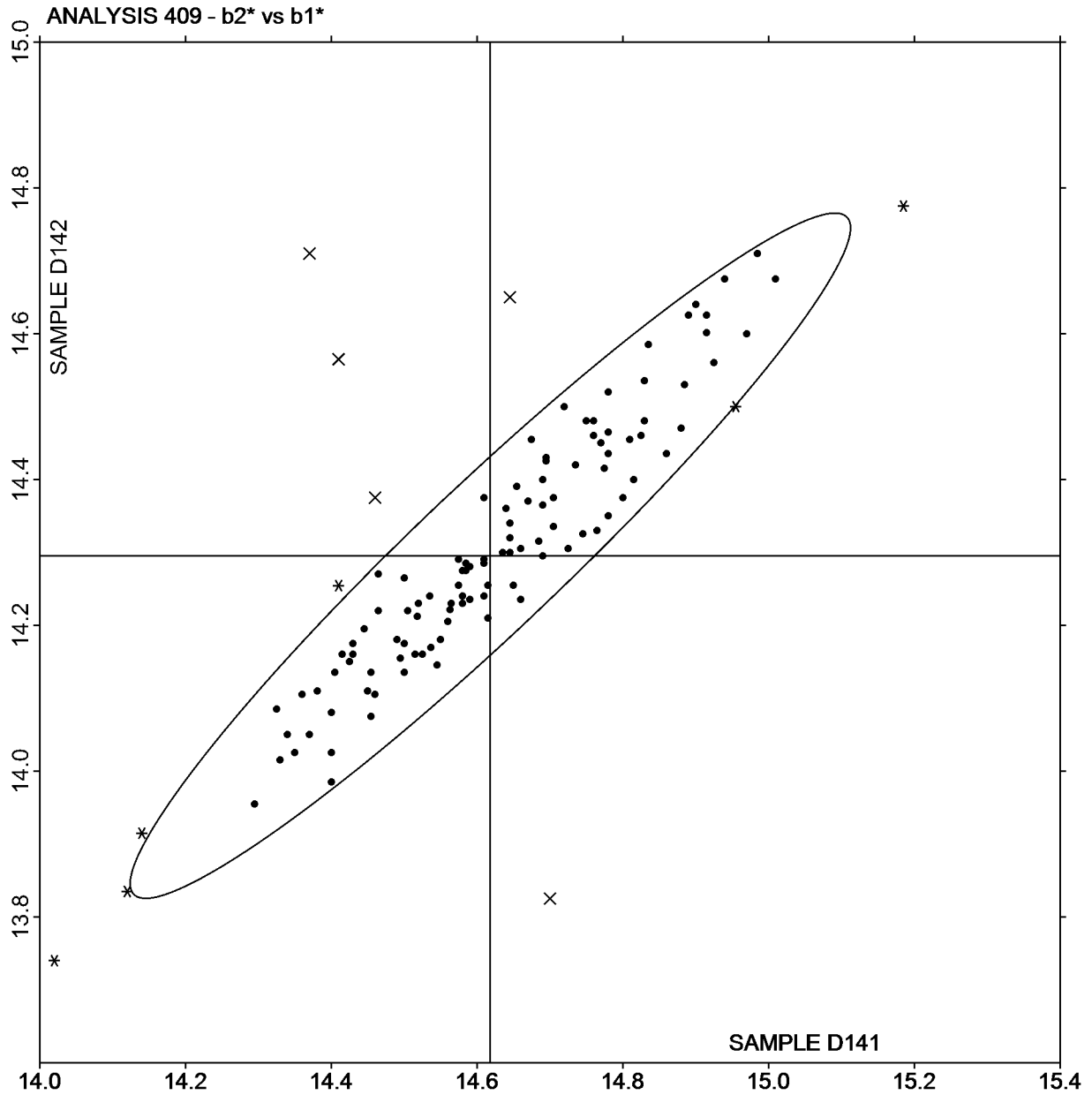
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

b2* vs b1*

SAMPLE D141 = 14.62

SAMPLE D142 = 14.30



Plot created using absolute values.

Interlaboratory Testing Program for Color & Appearance

Analysis 411

Spectrophotometric - Sphere Geometry Instruments

Reflectance at 16 Selected Wavelengths

WebCode	Data Flag	Spectrophotometric Reflectance values (as %)at selected wavelengths																Instr Code
		400	420	440	460	480	500	520	540	560	580	600	620	640	660	680	700	
Sample D141																		
23KRME	X	4.73X	4.62X	4.54X	4.42X	4.31X	4.22X	4.11X	4.02X	3.92X	3.84X	3.75X	3.71X	3.62X	3.53X	3.46X	3.46X	AM
2F73AK		11.28	12.77	15.19	17.77	20.26	23.58	29.10	33.72	29.60	21.56	14.79	12.14	11.41	11.40	12.39	13.24	XI
2KGMBJ		11.38	12.62	14.92	17.64	20.11	23.39	28.73	33.55	29.46	21.78	14.84	12.08	11.40	11.21	12.30	13.34	XO
2QMR9P		11.36	12.85	15.22	18.02	20.37	23.58	29.16	34.20	30.42	22.26	15.25	12.33	11.52	11.40	12.51	13.46	AM
32LC2P		11.28	12.71	15.14	17.84	20.18	23.46	28.96	33.90	29.91	21.87	14.89	12.24	11.47	11.36	12.42	13.49	MM
348QCX		11.30	12.76	15.19	17.81	20.21	23.46	28.98	33.70	29.71	21.66	14.80	12.24	11.45	11.30	12.39	13.42	XI
3MKXFL		11.42	12.79	15.15	17.80	20.17	23.43	28.95	33.64	29.69	21.58	14.72	12.17	11.44	11.35	12.34	13.39	XI
4GAGTV		11.29	12.70	15.14	17.82	20.19	23.45	28.88	33.77	29.90	21.89	14.91	12.21	11.42	11.31	12.35	13.45	MM
63B6L4		11.25	12.74	15.15	17.87	20.31	23.55	29.11	34.03	30.16	22.05	15.06	12.25	11.44	11.27	12.32	13.30	AL
642K3L		11.62	12.86	15.27	17.93	20.26	23.54	29.05	33.95	29.91	22.11	14.88	12.15	11.61	11.23	12.19	13.36	HP
66W7UR		11.38	12.75	15.10	17.77	20.09	23.33	28.73	33.57	29.80	21.78	14.91	12.21	11.42	11.31	12.33	13.46	XH
6LKEUB		11.27	12.65	15.05	17.72	20.01	23.29	28.71	33.72	29.82	21.79	14.83	12.18	11.42	11.32	12.39	13.46	XX
6QVUYR		11.47	12.88	15.32	17.94	20.30	23.55	29.10	33.90	29.86	21.77	14.89	12.32	11.56	11.47	12.53	13.67	XI
729JLG		11.34	12.66	15.11	17.78	20.12	23.38	28.96	34.27	30.05	21.86	14.84	12.22	11.50	11.31	12.41	13.58	PE
79PPBF		11.33	12.65	15.11	17.94	20.32	23.54	29.09	34.20	30.38	22.18	15.14	12.31	11.54	11.44	12.54	13.42	AM
7HWMVD		11.47	12.77	15.35	18.03	20.43	23.72	29.43	34.07	29.78	21.72	14.81	12.22	11.55	11.37	12.37	13.47	HW
93EBHA		11.39	13.00	15.44	18.09	20.53	23.71	29.37	34.27	30.19	21.99	14.97	12.28	11.51	11.41	12.50	13.47	AO
9HB3C4		11.23	12.74	15.12	17.78	20.11	23.39	28.87	33.66	29.82	21.77	14.92	12.21	11.43	11.33	12.35	13.41	XI
9L8N2L		11.40	12.84	15.29	17.96	20.32	23.58	29.11	34.01	30.10	22.09	15.09	12.39	11.59	11.47	12.52	13.62	MM
9W96Y4		12.13	13.64X	16.25X	19.05X	21.45X	24.73X	30.41X	35.42X	31.50X	23.02X	15.85X	12.91	12.14X	12.02X	13.29X	13.97	AO
9XZ9HC		11.24	12.69	15.07	17.73	20.10	23.26	28.89	33.62	29.84	21.88	15.00	12.26	11.54	11.38	12.50	13.62	MX
ARUP66		11.25	12.71	15.13	17.84	20.22	23.57	29.10	33.90	29.92	21.82	14.86	12.20	11.42	11.35	12.36	13.46	XI
AZMZFZ		11.45	12.72	15.13	17.80	20.16	23.37	28.73	33.62	29.56	21.58	14.81	12.14	11.40	11.29	12.33	13.41	XI
B2W48C		11.88	13.55X	16.01X	18.81X	21.31X	24.62X	30.47X	35.49X	31.31X	22.85X	15.68X	12.78	12.01	11.91	13.02	14.03	AR
B6C732		11.42	12.79	15.27	17.93	20.38	23.49	29.06	33.92	30.05	22.04	15.04	12.23	11.45	11.35	12.46	13.38	AM

Interlaboratory Testing Program for Color & Appearance

Analysis 411

Spectrophotometric - Sphere Geometry Instruments

Reflectance at 16 Selected Wavelengths

WebCode	Data Flag	Spectrophotometric Reflectance values (as %)at selected wavelengths																Instr Code
		400	420	440	460	480	500	520	540	560	580	600	620	640	660	680	700	
Sample D141																		
B77UJC		11.59	12.86	15.39	18.03	20.42	23.70	29.43	33.88	29.51	21.48	14.68	12.22	11.58	11.35	12.42	13.52	HW
B78RU8		11.32	12.65	14.89	17.78	19.73	23.16	28.61	33.11	29.25	21.35	14.52	11.89	11.05	11.00	11.98	13.94	GD
BB7YJB		11.32	12.69	15.03	17.76	20.10	23.36	28.85	33.65	29.76	21.72	14.77	12.05	11.25	11.14	12.18	13.37	XI
BG7MR3		11.39	12.76	15.27	18.04	20.38	23.64	29.22	34.22	30.39	22.12	15.16	12.35	11.58	11.50	12.62	13.35	AJ
BP2F9A		11.35	12.77	15.19	17.84	20.20	23.47	28.91	33.80	29.86	21.72	14.82	12.18	11.39	11.36	12.38	13.40	XI
BUFV38		11.51	12.97	15.41	18.15	20.50	23.76	29.36	34.37	30.50	22.22	15.21	12.42	11.67	11.57	12.73	13.49	AJ
BYKYFM		11.49	12.76	15.20	17.91	20.26	23.49	29.06	34.12	30.13	22.24	15.09	12.21	11.41	11.23	12.23	13.39	HP
D4WVEF		11.51	12.76	15.23	18.01	20.37	23.59	29.27	34.14	30.28	22.08	15.14	12.27	11.50	11.35	12.46	13.45	AM
D99CUC		11.19	12.56	15.02	17.61	20.02	23.26	28.65	33.58	29.48	21.52	14.65	12.03	11.30	11.24	12.27	13.37	MI
DEBHAF		11.38	12.84	15.25	17.88	20.24	23.53	28.97	33.83	29.78	21.70	14.85	12.20	11.41	11.37	12.37	13.42	XI
DVH8F9	X	13.60X	12.40	11.27X	11.46X	12.21X	14.87X	22.04X	30.39X	34.72X	29.39X	23.72X	20.43X	17.98X	15.29X	12.83	11.48X	CA
DZVK8Z		11.31	12.73	15.16	17.86	20.20	23.43	28.91	33.89	30.00	22.01	14.97	12.27	11.50	11.38	12.42	13.52	MM
E6JLM6		11.37	12.80	15.34	18.03	20.47	23.67	29.34	34.47	30.36	22.20	15.17	12.32	11.55	11.44	12.50	13.50	AJ
EE94M8		11.41	12.94	15.27	18.00	20.31	23.49	29.08	34.15	30.26	22.09	15.16	12.31	11.53	11.43	12.51	13.49	AJ
EMYVLK		11.42	12.86	15.28	17.95	20.27	23.56	29.06	33.93	30.08	22.09	15.06	12.33	11.54	11.43	12.49	13.58	MM
EP6NUK		11.20	12.69	15.05	17.68	20.00	23.31	28.88	33.59	29.64	21.70	14.81	12.20	11.51	11.39	12.47	13.51	MI
F44KGW		11.27	12.71	15.09	17.90	20.24	23.56	29.25	34.07	29.76	21.84	14.94	12.30	11.61	11.48	12.62	13.64	XO
F6UBF3		11.21	12.58	15.02	17.78	20.13	23.35	29.06	34.20	30.02	21.85	14.80	12.21	11.47	11.30	12.42	13.64	MU
F9E7FA		11.16	12.64	15.07	17.76	20.15	23.25	28.83	33.93	29.97	21.88	14.91	12.17	11.40	11.28	12.32	13.25	AJ
FFEXVC		11.54	12.94	15.30	18.08	20.44	23.68	29.39	34.19	29.95	21.90	14.97	12.32	11.64	11.49	12.59	13.66	XO
FJWM9G		11.30	12.85	15.28	18.33	20.39	23.58	29.11	34.19	30.32	22.07	15.14	12.30	11.54	11.43	12.52	13.51	XX
FR8GAG		11.28	12.86	15.28	17.97	20.29	23.46	28.96	33.90	30.03	21.90	15.05	12.22	11.46	11.34	12.42	13.34	AJ
FXXJ89		11.63	12.74	15.17	17.83	20.24	23.47	29.00	34.10	30.21	22.17	14.99	12.25	11.42	11.18	12.20	13.39	HP
FYBTKF		11.28	12.70	15.07	17.79	20.10	23.30	28.84	33.87	30.27	22.03	15.03	12.21	11.44	11.34	12.47	13.27	AJ
GBJPNM		11.23	12.71	15.13	17.77	20.12	23.40	28.93	33.67	29.65	21.61	14.82	12.22	11.44	11.37	12.40	13.48	XI

Interlaboratory Testing Program for Color & Appearance
 Analysis 411

Spectrophotometric - Sphere Geometry Instruments

Reflectance at 16 Selected Wavelengths

WebCode	Data Flag	Spectrophotometric Reflectance values (as %)at selected wavelengths																Instr Code
		400	420	440	460	480	500	520	540	560	580	600	620	640	660	680	700	
Sample D141																		
HBET96		11.50	12.94	15.32	18.01	20.35	23.57	29.00	33.74	29.97	22.06	15.11	12.36	11.54	11.45	12.45	13.56	MM
HGNWR		11.20	12.72	15.10	17.84	20.20	23.41	28.92	34.11	30.25	22.13	15.08	12.27	11.50	11.40	12.37	13.45	AJ
HVG4PD		9.67X	12.26	14.48X	17.55	19.38X	23.28	29.29	33.66	30.38	22.25	14.89	11.55	11.30	11.14	12.05	12.71X	GA
HZXUBT		11.33	12.64	15.14	17.79	20.16	23.31	28.86	33.70	29.75	21.66	14.85	12.19	11.41	11.34	12.40	13.37	XI
JFNV86		11.25	12.61	15.08	17.77	20.20	23.47	29.05	34.45	30.15	21.91	14.79	12.14	11.40	11.19	12.28	13.29	CE
JVJEGV		13.66X	12.47	15.17	17.79	20.09	23.21	29.48	33.85	29.54	22.21	15.05	11.10X	11.43	11.17	12.21	13.04	GD
K2JUAU		11.37	12.75	14.37X	17.82	20.17	23.37	29.07	34.05	30.02	21.88	14.89	12.17	11.43	11.26	12.38	13.50	MU
K7Y6KD		11.53	12.89	15.32	18.01	20.45	23.63	29.24	34.07	30.09	22.02	15.15	12.28	11.48	11.47	12.45	13.31	AM
KE8AK3		11.42	12.65	15.09	17.71	20.02	23.21	28.71	33.57	29.49	21.58	14.86	12.24	11.54	11.32	12.44	13.65	MG
KHB646		11.18	12.72	14.99	17.69	20.04	23.29	28.84	33.63	29.73	21.65	14.76	12.11	11.36	12.30X	12.37	13.45	XH
L8H9F9		11.44	12.81	15.30	18.03	20.38	23.67	29.53	34.29	30.15	21.80	14.87	12.25	11.53	11.43	12.56	13.70	MV
LHN7CP		11.48	12.89	15.35	18.09	20.44	23.68	29.26	34.27	30.51	22.20	15.21	12.38	11.64	11.52	12.71	13.44	AO
LTMNZ7		12.36	12.84	15.30	18.05	20.41	23.66	29.29	34.41	30.52	22.22	15.23	12.39	11.61	11.52	12.62	13.63	AM
MK73KU		11.42	12.73	15.23	18.00	20.36	23.58	29.11	34.13	30.27	22.05	15.06	12.24	11.48	11.38	12.49	13.40	AM
MYNFT2		11.02	12.72	15.18	17.89	20.14	23.50	29.30	33.86	29.45	21.46	14.68	12.09	11.24	11.37	12.46	13.54	XO
NHEXCZ		11.37	12.81	15.30	17.98	20.26	23.47	29.06	34.15	30.40	22.14	15.14	12.29	11.58	11.42	12.73	13.34	AO
P2KN4N		11.30	12.81	15.19	17.97	20.30	23.46	29.04	34.18	30.22	21.98	15.05	12.29	11.54	11.42	12.51	13.47	AO
P32ARR		11.35	12.80	15.20	17.90	20.30	23.50	29.65	34.50	30.25	21.70	14.75	12.20	11.50	11.40	12.40	13.50	MU
PLC4JY		11.38	12.78	15.18	17.89	20.21	23.41	28.97	34.02	30.44	22.15	15.15	12.31	11.56	11.43	12.64	13.41	AO
PPT2XT		11.45	12.88	15.29	18.02	20.38	23.65	29.14	34.07	30.13	22.08	15.02	12.32	11.54	11.42	12.55	13.73	MM
PRZG8K		11.43	12.79	15.30	18.06	20.44	23.71	29.31	34.27	30.45	22.15	15.09	12.35	11.60	11.46	12.71	13.36	AJ
PVW6L7		11.74	13.14	15.63	18.08	20.45	23.63	29.36	34.03	30.08	21.78	14.81	12.30	11.63	11.32	12.69	13.84	HH
Q63AC3		11.53	12.79	15.30	18.12	20.52	23.84	29.53	34.71	30.50	22.17	15.16	12.38	11.63	11.52	12.68	13.54	AJ
Q89RAX		9.96X	11.62X	14.44X	17.64	20.43	24.13	30.95X	36.47X	31.27X	21.76	13.75X	10.62X	9.74X	9.63X	10.92X	12.19X	XO
QAEFM3		11.52	12.72	15.13	17.95	20.23	23.37	29.16	34.04	30.12	21.82	14.84	12.20	11.47	11.30	12.44	13.59	MU

Interlaboratory Testing Program for Color & Appearance
 Analysis 411

Spectrophotometric - Sphere Geometry Instruments

Reflectance at 16 Selected Wavelengths

WebCode	Data Flag	Spectrophotometric Reflectance values (as %)at selected wavelengths																Instr Code
		400	420	440	460	480	500	520	540	560	580	600	620	640	660	680	700	
Sample D141																		
QK28KT		11.13	12.61	14.92	17.59	19.94	23.21	28.61	33.43	29.45	21.48	14.69	12.18	11.36	11.27	12.36	13.39	XH
QL9YGV		11.91	12.94	15.27	17.98	20.40	23.56	29.16	34.03	30.23	22.12	15.12	12.32	11.53	11.45	12.53	13.52	AJ
QM7VYH		11.44	12.81	15.22	17.85	20.46	23.52	29.61	33.98	29.81	21.95	14.83	12.21	11.45	11.35	12.45	13.47	XU
QX4CF7		11.80	13.18	15.78	18.18	20.70	23.79	29.68	34.26	30.06	21.68	14.69	12.40	11.67	11.42	12.76	14.01	HH
QXLW9W		10.95	12.32	14.78	17.46	19.87	23.11	28.67	34.02	29.81	21.64	14.58	11.93	11.19	11.00	12.09	13.27	CA
R7UMDK		11.40	12.90	15.30	17.93	20.31	23.50	28.92	33.71	29.91	21.93	14.99	12.27	11.48	11.36	12.36	13.45	XI
REJDW7		11.08	12.48	14.84	17.55	19.55X	23.15	28.60	33.44	29.73	21.85	14.81	12.18	11.43	11.30	12.30	13.46	MI
RLJVB		11.34	12.68	15.18	17.90	20.20	23.38	29.05	34.22	30.06	21.87	14.85	12.20	11.46	11.29	12.44	13.69	MV
RW4UTV	X	34.15X	113.65X	126.84X	107.83X	100.99X	95.06X	90.76X	88.57X	87.87X	86.81X	86.56X	86.53X	87.34X	87.80X	87.14X	86.30X	AO
T37NJM		11.47	12.93	15.25	18.11	20.48	23.60	29.18	34.17	30.36	22.23	15.12	12.29	11.53	11.43	12.47	13.50	AO
T7928V		11.48	12.85	15.28	17.95	20.34	23.59	29.05	34.03	30.09	22.01	14.94	12.25	11.48	11.37	12.46	13.55	MM
TDMHM4		11.78	12.54	14.70	17.52	19.96	23.22	28.68	33.70	30.13	22.19	15.11	12.18	11.31	11.09	12.14	13.15	HG
TLGKTK		11.28	12.80	15.20	17.95	20.36	23.48	29.04	33.88	30.08	21.98	15.01	12.20	11.46	11.35	12.40	13.43	AQ
TMGV2P		11.33	12.87	15.21	18.01	20.36	23.55	29.11	34.20	30.31	22.08	15.12	12.30	11.53	11.46	12.56	13.42	AM
TP2FTR		11.40	12.75	15.07	17.75	20.08	23.27	28.71	33.47	29.76	21.74	14.88	12.20	11.49	11.37	12.37	13.49	XH
TWH2NH		11.33	12.76	15.13	17.80	20.15	23.42	28.87	33.69	29.71	21.71	14.91	12.19	11.44	11.36	12.35	13.42	XI
UDMPM		11.56	12.79	15.21	17.97	20.30	23.54	29.23	34.55	30.26	21.93	14.86	12.25	11.51	11.37	12.54	13.76	MV
VAZHJT		11.22	12.64	14.97	17.67	20.06	23.26	28.71	33.54	29.55	21.61	14.79	12.21	11.45	11.32	12.39	13.43	MI
VEQUJV		11.15	13.01	15.34	18.08	20.52	23.77	29.58	34.30	30.32	22.27	15.19	12.34	11.57	11.54	12.70	13.91	HF
VK2VQK		11.50	12.94	15.40	18.09	20.34	23.56	29.13	34.15	30.35	22.10	15.16	12.34	11.57	11.47	12.56	13.42	AJ
VQ8E3R		11.45	12.87	15.31	18.05	20.42	23.72	29.31	34.23	30.52	22.15	15.04	12.29	11.59	11.49	12.72	13.40	AO
VXN3ML		11.31	12.78	15.16	17.93	20.32	23.56	29.20	34.22	30.29	22.12	15.18	12.31	11.53	11.41	12.57	13.43	AM
WDCMVT		11.38	12.97	15.38	18.03	20.43	23.60	29.28	33.95	29.97	22.01	15.12	12.30	11.54	11.45	12.52	13.28	AJ
WP8VFG		11.31	12.69	15.08	17.75	20.06	23.35	28.84	33.61	29.66	21.69	14.83	12.17	11.41	11.33	12.32	13.39	XI
WYWPQ		11.26	12.69	15.07	17.87	20.17	23.39	29.20	34.10	30.13	21.77	14.80	12.16	11.46	11.31	12.46	13.59	MV

Interlaboratory Testing Program for Color & Appearance
 Analysis 411

Spectrophotometric - Sphere Geometry Instruments

Reflectance at 16 Selected Wavelengths

WebCode	Data Flag	Spectrophotometric Reflectance values (as %) at selected wavelengths																Instr Code
		400	420	440	460	480	500	520	540	560	580	600	620	640	660	680	700	
Sample D141																		
X2X3XH		11.86	12.97	15.18	17.95	20.27	23.55	29.16	33.58	29.61	21.70	15.06	12.31	11.51	11.39	12.40	13.42	MJ
XBNN3F		12.05	12.33	15.28	17.84	20.07	22.87	29.31	33.68	29.58	21.50	14.87	11.02X	11.40	11.18	12.14	12.98	GD
XHMP9V		11.14	12.83	15.23	17.89	20.25	23.49	28.97	33.77	29.91	21.94	15.01	12.27	11.45	11.36	12.37	13.46	MM
XKUFLH		11.40	12.70	15.18	17.79	20.19	23.41	28.83	33.99	30.24	22.36	15.16	12.24	11.59	11.26	12.26	13.38	HP
XMG6RG		11.29	12.76	14.99	17.68	20.08	23.29	28.72	33.48	29.45	21.50	14.72	12.12	11.39	11.35	12.32	13.41	XH
XZ3H7C		11.39	12.85	15.26	17.94	20.32	23.60	29.11	34.05	30.03	21.99	14.97	12.29	11.55	11.42	12.48	13.56	MM
YEHGJB		11.26	12.93	15.16	17.80	20.04	23.16	28.95	33.73	29.65	21.50	14.78	11.87	11.33	11.11	12.06	12.95	GD
YJCD4V		11.74	13.10	15.41	18.13	20.55	23.67	29.24	34.26	30.33	22.17	15.14	12.32	11.63	11.49	12.58	13.57	AM
YZFHFR		11.29	12.79	15.19	17.84	20.22	23.47	28.99	33.80	29.78	21.73	14.84	12.20	11.43	11.34	12.35	13.43	XI
Z7738E		11.34	12.70	15.07	17.76	20.11	23.29	28.71	33.75	30.00	22.02	14.97	12.23	11.46	11.31	12.35	13.45	MM
ZJ8NLW		11.51	12.96	15.35	17.92	20.29	23.58	29.08	33.92	29.90	21.79	14.91	12.29	11.56	11.43	12.44	13.50	XI
ZMQBBH		11.43	12.85	15.31	18.04	20.37	23.59	29.22	34.13	30.21	21.99	15.02	12.23	11.49	11.30	12.40	13.60	MT
ZNKTXW		11.46	12.75	15.14	17.91	20.26	23.57	29.17	34.00	29.92	21.79	14.87	12.23	11.45	11.29	12.38	13.48	GG

Summary Statistics

Grand Means	11.40	12.77	15.19	17.90	20.26	23.50	29.11	34.00	30.03	21.92	14.95	12.20	11.47	11.36	12.43	13.46
Stnd Dev Btwn Labs	0.37	0.21	0.23	0.21	0.25	0.24	0.35	0.42	0.37	0.27	0.22	0.26	0.21	0.23	0.23	0.23

Comments assigned on Data Flags for Test #411

23KRME (X) - Low % reflectance data for all wavelengths.

DVH8F9 (X) - High and low % reflectance data at various wavelengths.

RW4UTV (X) - High % reflectance data at all wavelengths.

Interlaboratory Testing Program for Color & Appearance

Analysis 440

60 Degree Gloss - Paint Chips

ASTM Method D 523

WebCode	Data Flag	Sample H141			Sample H142			Instr Code
		Lab Mean	Difference from Grand Mean	Comparative Performance Value	Lab Mean	Difference from Grand Mean	Comparative Performance Value	
2KGMBJ		36.53	-0.17	-0.42	45.30	-0.89	-1.73	GK
348QCX		36.57	-0.13	-0.31	46.05	-0.14	-0.28	GL
3MKXFL		36.23	-0.47	-1.14	45.43	-0.76	-1.49	GL
46G9WE		36.98	0.28	0.67	46.93	0.74	1.43	GK
49HYEM		36.75	0.05	0.13	46.35	0.16	0.31	GL
63B6L4		36.10	-0.60	-1.44	46.28	0.09	0.17	GL
6JA8BU		37.33	0.63	1.52	46.93	0.74	1.43	GK
6LKEUB		36.60	-0.10	-0.23	46.20	0.01	0.02	GL
72BYM4		37.05	0.35	0.85	46.83	0.64	1.24	GL
7HWMVD		36.80	0.10	0.25	46.63	0.44	0.85	GL
7KLTND	X	35.10	-1.60	-3.86	45.00	-1.19	-2.32	GB
7PZ98M	X	38.28	1.58	3.81	47.43	1.24	2.41	GL
9L8N2L		37.48	0.78	1.88	46.43	0.24	0.46	RA
9TRMUF		36.73	0.03	0.07	45.78	-0.41	-0.81	GL
9XZ9HC	X	37.78	1.08	2.60	48.05	1.86	3.62	GK
AC22QZ		36.40	-0.30	-0.72	45.70	-0.49	-0.95	MW
ARUP66		36.43	-0.27	-0.66	46.28	0.09	0.17	GN
AZMZFZ		37.20	0.50	1.21	46.43	0.24	0.46	GL
B77UJC		36.75	0.05	0.13	46.05	-0.14	-0.27	GK
B78RU8		36.55	-0.15	-0.35	45.95	-0.24	-0.47	GN
BB7YJB		36.95	0.25	0.61	46.88	0.69	1.34	GL
BG7MR3		36.63	-0.07	-0.17	45.78	-0.41	-0.81	MW
BP3MHB		36.93	0.23	0.55	46.48	0.29	0.56	GL
BUFV38		37.03	0.33	0.79	46.55	0.36	0.70	XX
BYKYFM		36.60	-0.10	-0.23	45.95	-0.24	-0.47	GL
CNMBAB		36.78	0.08	0.19	46.20	0.01	0.02	GL
CVN3L9		35.75	-0.95	-2.29	45.63	-0.56	-1.10	GN
D99CUC		36.50	-0.20	-0.48	45.78	-0.41	-0.81	GL
DLUBE8		37.08	0.38	0.91	46.68	0.49	0.95	GN
ENY47K		36.30	-0.40	-0.96	46.40	0.21	0.41	GK
EP6NUK		36.73	0.03	0.07	46.00	-0.19	-0.37	GL
F44KGW		36.70	0.00	0.01	46.90	0.71	1.38	GN
FFEXVC		37.43	0.73	1.76	46.28	0.09	0.17	MR
FRT3TY		37.38	0.68	1.64	46.70	0.51	0.99	GK
FT2UQ2		36.73	0.03	0.07	45.80	-0.39	-0.76	GL
FYBTKF		36.88	0.18	0.43	46.63	0.44	0.85	GK
GBJPNM		37.18	0.48	1.15	46.28	0.09	0.17	GL
GFU7BD		36.13	-0.57	-1.38	45.55	-0.64	-1.24	GL
GW6BU4		36.75	0.05	0.13	45.45	-0.74	-1.44	GB
HK6G48		36.58	-0.12	-0.29	46.00	-0.19	-0.37	GN
HVG4PD		36.48	-0.22	-0.54	46.35	0.16	0.31	GK
HZXUBT		36.58	-0.12	-0.29	45.40	-0.79	-1.54	MH
JEARTY		37.50	0.80	1.94	46.63	0.44	0.85	GK
JFLBRB		36.23	-0.47	-1.14	45.40	-0.79	-1.54	GL
JVJEGV		36.50	-0.20	-0.48	45.75	-0.44	-0.86	GB

Interlaboratory Testing Program for Color & Appearance

Analysis 440

60 Degree Gloss - Paint Chips

ASTM Method D 523

WebCode	Data Flag	Sample H141			Sample H142			Instr Code
		Lab Mean	Difference from Grand Mean	Comparative Performance Value	Lab Mean	Difference from Grand Mean	Comparative Performance Value	
JYG4C9		36.58	-0.12	-0.29	46.18	-0.01	-0.03	GL
KE87VX		36.90	0.20	0.49	46.83	0.64	1.24	GK
KL6NYV	*	37.00	0.30	0.73	47.40	1.21	2.36	PC
L3Q4L6	X	40.03	3.33	8.03	39.20	-6.99	-13.61	GL
LP3WRP	*	35.85	-0.85	-2.04	44.68	-1.51	-2.95	GK
LQXHHV		36.93	0.23	0.55	46.30	0.11	0.22	GK
LXEYB6		36.58	-0.12	-0.29	46.38	0.19	0.36	GL
MJVTEV		36.48	-0.22	-0.54	46.20	0.01	0.02	PA
ML29VZ		36.20	-0.50	-1.20	45.38	-0.81	-1.59	XX
MPX2KN		36.03	-0.67	-1.62	45.45	-0.74	-1.44	GL
MYNFT2		36.35	-0.35	-0.84	46.15	-0.04	-0.08	GL
P2KN4N		35.83	-0.87	-2.11	45.98	-0.21	-0.42	GQ
PVKB77		37.00	0.30	0.73	46.30	0.11	0.22	GL
Q3XUNW		36.93	0.23	0.55	46.33	0.14	0.26	GK
QAEFM3		36.55	-0.15	-0.35	46.65	0.46	0.90	GL
QK28KT		36.25	-0.45	-1.08	46.25	0.06	0.12	GL
QL9YGV		36.43	-0.27	-0.66	45.53	-0.66	-1.29	GK
QXLW9W		36.83	0.13	0.31	46.55	0.36	0.70	GL
R79AMM	*	37.85	1.15	2.78	47.25	1.06	2.07	GN
RFV9ER		36.18	-0.52	-1.26	45.80	-0.39	-0.76	GN
TP2FTR		36.55	-0.15	-0.35	45.50	-0.69	-1.34	GL
UDMPPEM		36.88	0.18	0.43	46.13	-0.06	-0.13	RA
VAZHJT		36.50	-0.20	-0.48	46.23	0.04	0.07	GK
VH9JWZ		37.28	0.58	1.40	46.45	0.26	0.51	GL
WYWPQR		36.78	0.08	0.19	46.48	0.29	0.56	GL
XBNN3F		36.98	0.28	0.67	46.28	0.09	0.17	GB
XMG6RG		36.38	-0.32	-0.78	46.13	-0.06	-0.13	GK
XZ3H7C		36.90	0.20	0.49	46.73	0.54	1.04	GL
YJCD4V		37.18	0.48	1.15	46.90	0.71	1.38	GK

Summary Statistics

Grand Means

36.70 Gloss Units

46.19 Gloss Units

Std Dev Btwn Labs

0.41 Gloss Units

0.51 Gloss Units

Statistics based on 70 of 74 reporting participants

Comments on assigned Data Flags for Test #440

7KLTDN(X) - Low data for Sample H141. Also Inconsistent in testing within Sample H141.

7PZ98M(X) - High data for Sample H141.

9XZ9HC(X) - High data for Sample H142.

L3Q4L6(X) - Low data for Sample H142. High Data for Sample H141. Also Inconsistent in testing within Sample H142.

Interlaboratory Testing Program for Color & Appearance

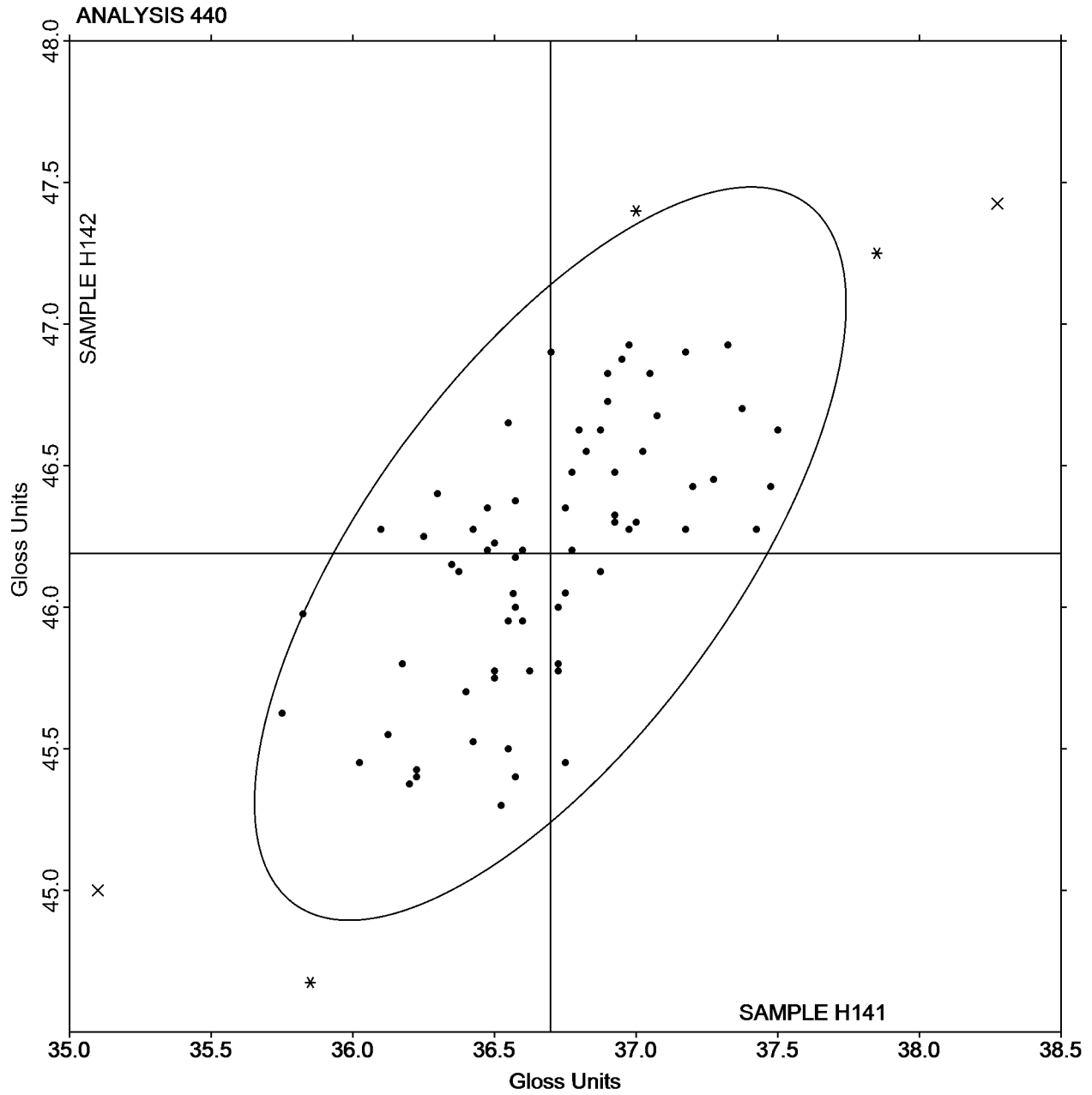
Analysis 440

60 Degree Gloss - Paint Chips

ASTM Method D 523

SAMPLE H141 = 36.70 Gloss Units

SAMPLE H142 = 46.19 Gloss Units



Interlaboratory Testing Program for Color & Appearance

Analysis 442

85 Degree Gloss - Paint Chips

ASTM Method D 523

WebCode	Data Flag	Sample M141			Sample M142			Instr Code
		Lab Mean	Difference from Grand Mean	Comparative Performance Value	Lab Mean	Difference from Grand Mean	Comparative Performance Value	
3MKXFL		8.58	-0.20	-1.26	11.43	-0.43	-1.52	GL
6LKEUB		8.88	0.10	0.67	12.20	0.35	1.22	GL
ARUP66		8.63	-0.15	-0.93	11.58	-0.28	-0.99	GL
AZMZFZ		8.68	-0.10	-0.61	11.45	-0.40	-1.43	GL
B78RU8		9.03	0.25	1.64	11.68	-0.18	-0.63	GN
BB7YJB		8.78	0.00	0.03	11.95	0.10	0.34	GL
F44KGW		8.80	0.03	0.19	12.25	0.40	1.40	GN
Q89RAX		8.98	0.20	1.31	12.00	0.15	0.51	GN
QAEFM3		8.55	-0.22	-1.42	11.90	0.05	0.16	GL
QK28KT		8.75	-0.02	-0.13	12.00	0.15	0.51	GL
QXLW9W	X	7.75	-1.02	-6.56	10.15	-1.70	-6.02	GL
WYWPQR		8.85	0.08	0.51	11.98	0.12	0.43	GL

Summary Statistics

Grand Means	8.77	Gloss Units	11.85	Gloss Units
Std Dev Btwn Labs	0.16	Gloss Units	0.28	Gloss Units
Statistics based on 11 of 12 reporting participants				

Comments on assigned Data Flags for Test #442

QXLW9W(X) - Data for both samples are low.

Interlaboratory Testing Program for Color & Appearance

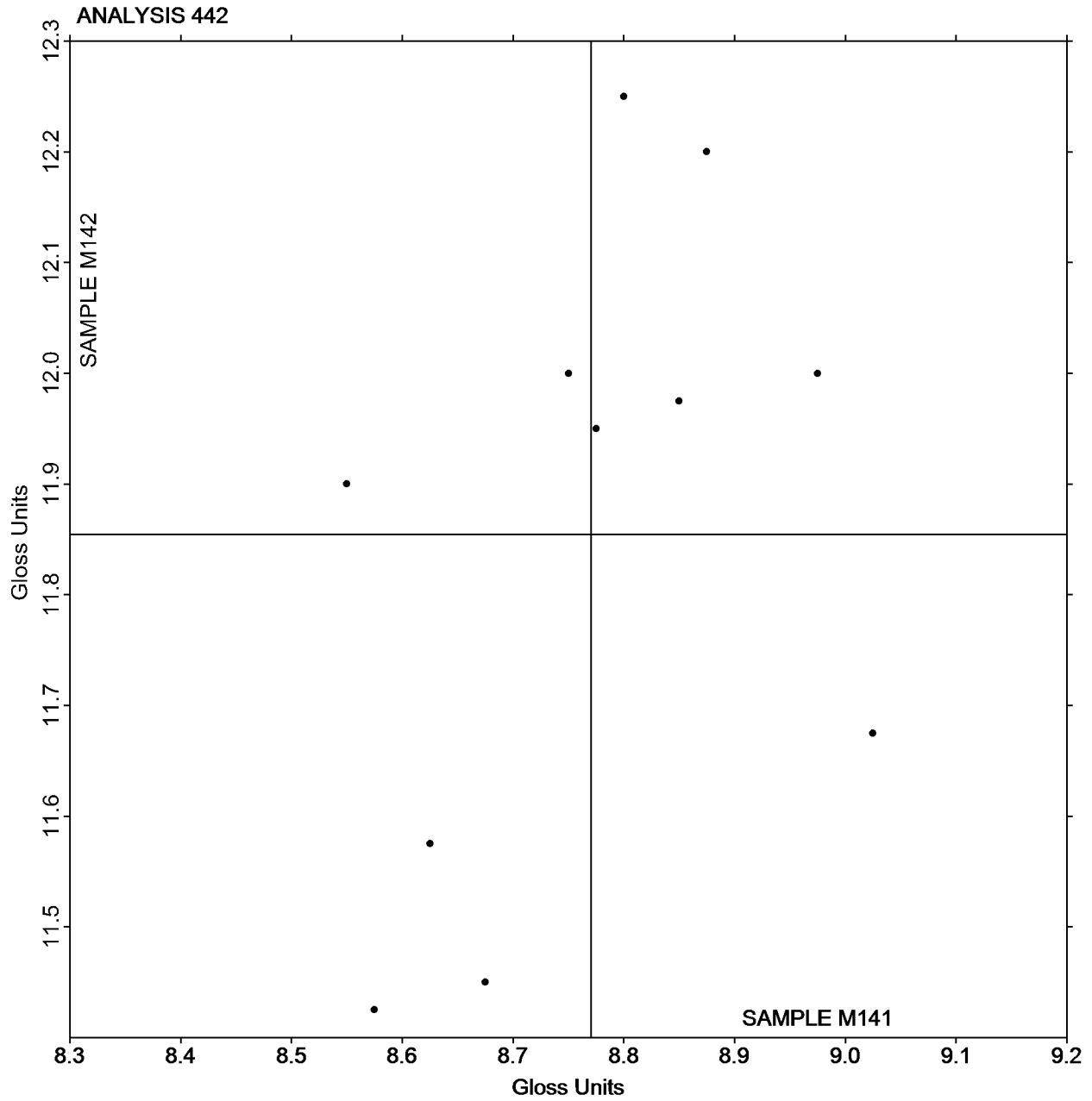
Analysis 442

85 Degree Gloss - Paint Chips

ASTM Method D 523

SAMPLE M141 = 8.77 Gloss Units

SAMPLE M142 = 11.85 Gloss Units



Instrument Code List - Report# 170

Instrument information as provided by laboratories

<u>Analysis</u>	<u>Analysis Name</u>
440	Gloss 60 Degree (Paint Chips)
Instrument code and descript	
GB	BYK Gardner Spectro - Guide Sphere Gloss
GK	BYK-Gardner micro-gloss (60)
GL	BYK-Gardner micro-TRI-gloss
GN	BYK-Gardner new micro-TRI-gloss
GQ	BYK-Gardner haze-gloss
MH	X-Rite/Macbeth Color-Eye XTH
MR	Macbeth Novo-Gloss (20/60/85)
MW	Minolta Multi-Gloss 268
PA	Photovolt micro-TRI-gloss G3
PC	Picogloss 503 Erichson
RA	Rhopoint Novo-Gloss Glossmeter
XX	Instrument make/model not specified by lab
442	Gloss 85 Degree (Paint Chips)
Instrument code and descript	
GL	BYK-Gardner micro-TRI-gloss
GN	BYK-Gardner new micro-TRI-gloss

Instrument Code List - Report# 170

Instrument information as provided by laboratories

Analysis Analysis Name

408 Color & Color Difference (Paint Chips) - 45-0

Instrument code and descript

AB	Data Color
AE	ACS Chroma-Sensor CS-3
GB	BYK-Gardner spectro-guide sphere gloss
GD	BYK-Gardner The Color Machine
GE	BYK-Gardner spectro-guide (45/0)
GH	BYK-Gardner Color-View
GU	Gretag Spectrolino Spectrophotometer
HK	Hunter MiniScan XE (45/0)
HW	Hunter LabScan XE
HY	Hunter Color Flex 45/0
MG	Macbeth 1500/PLUS or 2025+ Color Eye
MQ	Minolta CM-503c Spectrophotometer
TN	Topcon SR-1 Spectroradiometer
XK	X-Rite MA100 Multi-Angle SpectroPhotometer
XM	X-Rite MA58 Multi-Angle SpectroPhotometer
XN	X-Rite MA68 Multi-Angle SpectroPhotometer
XO	X-Rite MA68 II Multi-Angle SpectroPhotometer
XR	X-Rite 968 Portable SpectroPhotometer
XU	X-Rite 964 Portable SpectroPhotometer
XX	Instrument make/model not specified by lab
XZ	X-Rite

409 Color & Color Difference (Paint Chips) Sphere

Instrument code and descript

AJ	ACS-Datacolor 600	MJ	Macbeth Color-Eye 3000
AL	ACS-Datacolor Intl. Dataflash 100	MK	Macbeth Color-Eye 7000
AM	ACS-Datacolor 600 Plus	MM	Macbeth Color-Eye 7000a
AO	ACS-Datacolor 650X	MT	Minolta CM-2600d
AQ	ACS-Datacolor 600X	MU	Minolta
AR	Datacolor 400	MV	Minolta CM-3000d Series Spectrophotometer
CA	Cary 5000	PE	Perkin Elmer Spectrophotometer
CE	Cary 500	XH	X-Rite Color i5
GA	BYK Gardner Color-Guide Gloss	XI	X-Rite Color i7
GC	BYK-Gardner color-sphere	XM	X-Rite SP62 Portable Sphere Spectrophotometer
GD	BYK-Gardner spectro-guide sphere	XO	X-Rite SP64 Portable Sphere Spectrophotometer
GF	BYK-Gardner The Color Sphere (TCS)	XU	X-Rite Color Premier 8200 Spectrophotometer
GG	BYK-Gardner TCS II	XX	Instrument make/model not specified by lab
HF	Hunter ColorFlex Diffuse	XZ	X-Rite
HG	Hunter ColorQUEST		
HH	Hunter ColorQUEST XE		
HP	Hunter UltraScan PRO		
HW	Hunter UltraScan XE		
MG	Macbeth 2180 Color Eye		
MI	Macbeth Color i 5		

Instrument Code List - Report# 170

Instrument information as provided by laboratories

Analysis Analysis Name

411 Spectrophotometric (Paint Chips) - Sphere

Instrument code and descript

A J ACS-Datcolor 600
A L ACS-Datcolor Intl. Dataflash 100
A M ACS-Datcolor 600 Plus
A O ACS-Datcolor 650
A Q ACS-Datcolor 600X
A R Datcolor 400
C A Cary 5000
C E Cary 500
G A BYK Gardner Color - Guide Gloss
G D BYK-Gardner spectro-guide sphere
G G BYK-Gardner TCS II
H F Hunter ColorFlex Diffuse
H G Hunter ColorQUEST
H H Hunter ColorQUEST XE
H P Hunter UltraScan PRO
H W Hunter UltraScan XE
M G Macbeth 2180 Color Eye
M I Macbeth Color i5
M J Macbeth Color-Eye 3000 Spectrophotometer
M M Macbeth Color-Eye 7000a
M T Minolta CM-2600d
M U Minolta
M V Minolta CM-3000d Series Spectrophotometer
M X Minolta CM-508d Spectrophotometer
P E Perkin Elmer Spectrophotometer
X H X-Rite Color i5
X I X-Rite Color i7
X O X-Rite SP64
X U X-RiteColor Premier 8200 Spectrophotometer
X X Instrument make/model not specified by lab